

Oscilla galilae, a new species of Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) from the Eastern Mediterranean

Oscilla galilae, una nueva especie de Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) del Mediterráneo oriental

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Recibido el 26-I-2012. Aceptado el 12-III-2012

ABSTRACT

The finding of some specimens of a small pyramidellid along the Mediterranean coasts of Turkey, Israel and Cyprus, previously reported off the south-eastern coast of Turkey (Buzzurro & Greppi, 1996; Buzzurro *et al.*, 2001) as *Hinemoa cylindrica* (de Folin, 1879), induced us to revise this identification. *Hinemoa cylindrica* is of Indo-Pacific origin and has been originally attributed to the genus *Jaminea* Brown, 1827 (not Risso, 1826). Later, it has been transferred to the genus *Hinemoa* Oliver, 1915 (Buzzurro *et al.*, 2001). However, some details of its morphology do not agree with the description and figure of *Jaminea cylindrica* given by de Folin (1879). For a more suitable generic placement, we compared the species to the members of some closely resembling taxa in Pyramidellidae Gray, 1840 (e.g., *Cingulina*, A. Adams, 1860, *Hinemoa* Oliver, 1915, *Miralda* A. Adams, 1864, *Odetta* de Folin, 1870 and *Oscilla* Adams A., 1861). Its morphological characteristics have led us to assign it to the genus *Oscilla* as a new species.

RESUMEN

El hallazgo de algunos ejemplares de un pequeño piramidélido en las costas mediterráneas de Turquía, Israel y Chipre, previamente citado en la costa sur-oriental de Turquía (Buzzurro y Greppi, 1996; Buzzurro *et al.*, 2001) como *Hinemoa cylindrica* (de Folin, 1879), llevó a revisar esta identificación. *Hinemoa cylindrica* es de origen Indo-Pacífico y ha sido atribuida originalmente al género *Jaminea* Brown, 1827 (non Risso, 1826). Posteriormente, se ha transferido al género *Hinemoa* Oliver, 1915 (Buzzurro *et al.*, 2001). Sin embargo, algunos detalles de su morfología no cuadran con la descripción y la figura de *Jaminea cylindrica* dada por de Folin (1879). Con vistas a una identificación genérica más adecuada, se compararon la especie con miembros de algunos grupos taxonómicos más similares en Pyramidellidae Gray, 1840 (por ejemplo, *Cingulina*, A. Adams de 1860, *Hinemoa* Oliver, 1915, *Miralda* A. Adams, 1864, *Odetta* de Folin de 1870 y *Oscilla* A. Adams, 1861). Sus características morfológicas nos han llevado a describir una nueva especie en el género *Oscilla*.

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INTRODUCTION

Ongoing malacological research and the examination of numerous sediment samples collected along the coasts of Israel, in particular by dredging operations carried out off the port of Haifa, have produced many interesting discoveries including numerous species of Indo-Pacific origin (e.g., BOGI & GALIL, 1997, 2000, 2007, 2009). This time we recorded the discovery of some specimens of a pyramidellid gastropod already reported from the south-eastern coast of Turkey (BUZZURRO, HOARAU, GREPPI & PELORCE, 2001) and identified by the authors as *Jaminea cylindrica* de Folin, 1879, assigned

to the genus *Hinemoa* Oliver, 1915, albeit tentatively. This species, whose type locality indicated by de FOLIN (1879) is Borneo (South China Sea) has a wide Indo-Pacific distribution, but has not yet been reported from the Red Sea (DEKKER & ORLIN, 2000). However, morphological characteristics of newly found specimens make them easily distinguishable from de Folin's species. Upon examination, morphological characteristics of the shells have led us to assign them to an undescribed species of the genus *Oscilla* A. Adams, 1861, but not *Hinemoa*. A description of the new species along with a discussion of its taxonomic affinities is presented herein.

TAXONOMY

PYRAMIDELLOIDEA Gray, 1840

PYRAMIDELLIDAE Gray, 1840

Oscilla A. Adams, 1861

Oscilla galilae n. sp. (Fig. 1A-F)

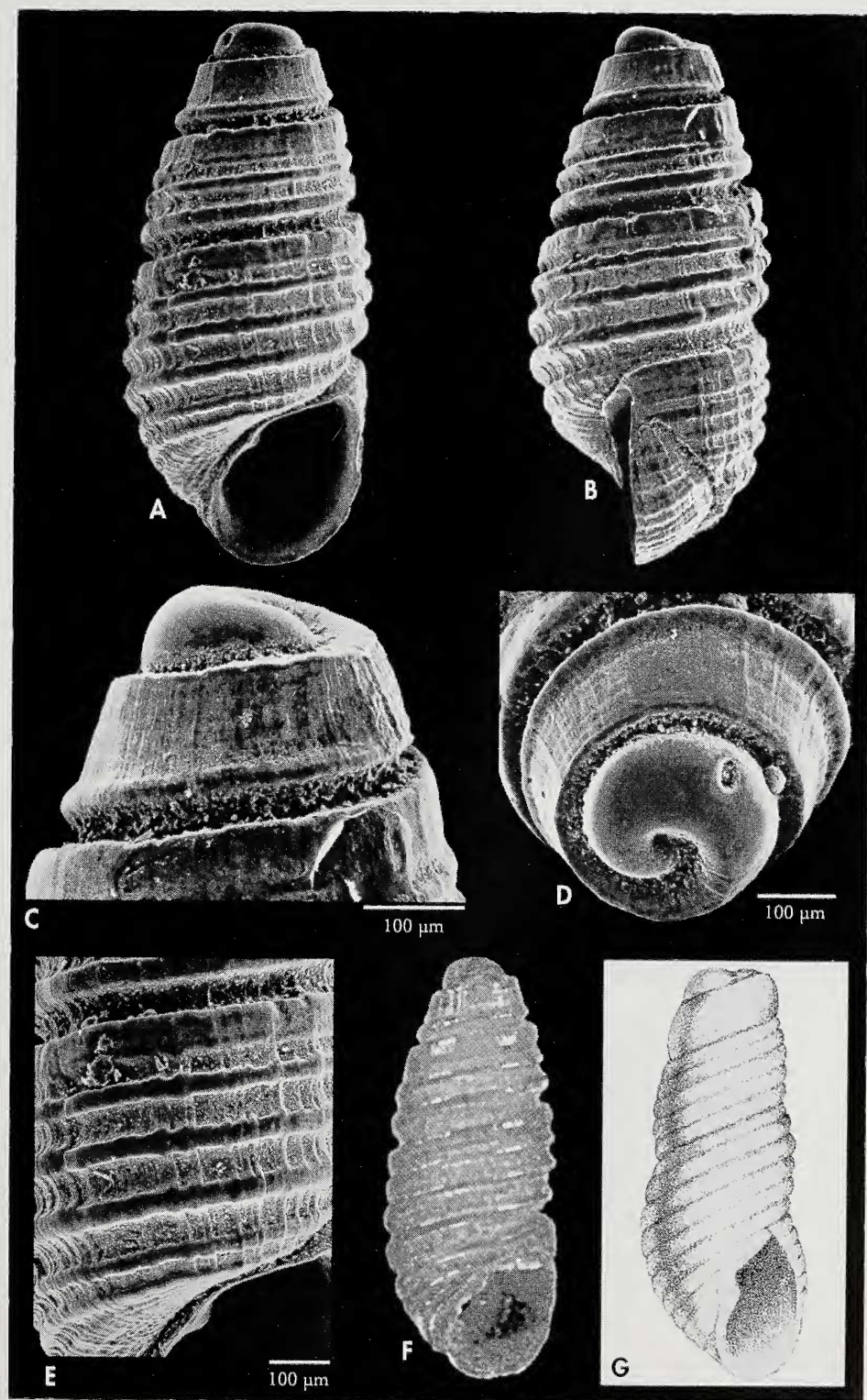
Type material: The holotype (1.40 × 0.65 mm) (Fig. 1A-E) is deposited in the National Collections of Natural History at Tel Aviv University with the catalog number TAU MO 73668. The paratypes are deposited in the following collections: paratypes A (Fig. 1F) and E (1.55 × 0.68 mm and 1.27 × 0.60 mm, respectively) in the collection of S.Ü. Karhan and M.B. Yokeş (Istanbul, Turkey); paratypes B, C and D (1.36 × 0.61 mm, 1.20 × 0.55 mm and 1.35 × 0.62 mm, respectively) in the collection of C. Bogi (Livorno, Italy); paratypes F and G (1.71 × 0.70 mm, 1.52 × 0.65 mm, respectively) in the collection S. Ravaggi (Firenze, Italy).

The holotype comes from dredging carried out in Haifa Bay, Israel (32° 54.544' N, 35° 04.093' E) at 10.5 m depth on 31.V.2009; paratype A from sediments collected manually using SCUBA in Carmel Reef, off Haifa (32° 50.529' N, 34° 56.637' E) at 21 m depth on 19.XI.2009; paratypes B and C from material collected by dredging carried out in the Port of Haifa (32° 54.433' N, 35° 01.661' E) at 25 m depth on 14.IV.2010; paratype D collected from the Port of Haifa (32° 54.357' N, 35° 02.793' E) at 20 m depth on 12.X.2010; paratype E from sand sample collected using SCUBA off Taşucu, Mersin, Turkey (36° 14.530' N, 33° 48.359' E) at 5 m depth on 03.IX.2007, and paratypes F and G off Capo Greco, Cyprus (34° 58.3618' N, 34° 04.3682' E) at 30 m depth on August 2011. The holotype and paratypes B, C and D were collected complete with soft parts.

Type locality: Sandy bottoms in and around the Port of Haifa (Mediterranean coast of Israel) at depths between 10 and 25 m.

(Right page) Figure 1. A-E: *Oscilla galilae* n. sp., holotype (TAU MO 73668), actual height 1.40 mm. A: frontal view; B: lateral view; C: protoconch, lateral view; D: protoconch, apical view; E: detail of the sculpture; F: paratype A, actual height 1.55 mm, frontal view. G: *Jaminea cylindrica*, original illustration given by DE FOLIN (1879).

(Página derecha) Figura 1. A-E: *Oscilla galilae* n. sp., holotipo (TAU MO 73668), altura real 1,40 mm. A: vista frontal; B: vista lateral; C: protoconcha, vista lateral; D: protoconcha, vista apical; E: detalle de la escultura, F: paratipo A, altura real 1,55 mm, vista frontal. G: *Jaminea cylindrica*, ilustración original por DE FOLIN (1879).



Etymology: The new species is named after Dr. Bella S. Galil, in recognition of her extensive contributions to taxonomy and to knowledge of the fauna from the Eastern Mediterranean Sea. The epithet is a noun in the genitive case.

Description: Shell of medium size for genus, attaining 1.71 mm height, elongate, cylindrical or slightly oval; color uniformly whitish. Teleoconch consisting of about three whorls, somewhat convex in profile, separated by well-marked and slightly oblique suture. Protoconch smooth, flat and heterostrophic, type C (VAN AARTSEN, 1977), with about 0.5 whorl; diameter about 300 μ m in holotype. The first whorl of teleoconch with two spiral ribs, visible only by transparency inside the spire. Spiral sculpture consisting of very pronounced spiral ribs, rounded, almost uniform that tends to increase with growth. Interspaces between the ribs narrower than the ribs themselves and crossed by numerous axial lamellae. Aperture about one-third of total height, oval, with a thin outer lip; columellar tooth distinct; umbilicus absent.

Distribution: Geographical distribution of the species seems to be restricted to shallow sublittoral areas in a few localities on Israeli, Turkish and Cypriot coasts in the eastern Mediterranean Sea.

Discussion: After examination of the present specimens (fig. 1 A-F), our attention was drawn (J. Pelorce, pers. comm.) to the fact that they correspond perfectly to those previously collected on the Turkish coast and identified as *Hinemoa cylindrica* (de Folin, 1879), a new combination proposed for *Jaminea cylindrica* by BUZZURRO ET AL. (2001).

However, we have been able to note some morphological details that do not agree with the description and illustration of *Jaminea cylindrica* given by de Folin. The original description of *J. cylindrica* is as follows (DE FOLIN, 1879: 266):

"Testa minutissima, sucylindrica, satis lata, paulò elongata, alba; anfractus embryonales II, obliquis apice occulto; normales III, in longitudine rapide augentes, liris validis spirali bus ornati; ultimo maximo, 1/3 testae aequante; apertura ovata paulò obliqua, margine columellare undulato, intus dentato.

Long.: 1 mm 4; lat.: 0 mm 5.

Très petite espèce, fort jolie et fort bien caractérisée par la position oblique de ses tours embryonnaires dont le sommet paraît caché; puis par sa forme presque cylindrique, peu allongée et relativement large. Les tours normaux, au nombre de trios, s'allongent rapidement, en demeurant presque de la même largeur. Ils sont ornés de cordons spiraux proportionnellement forts et bien exprimés. L'ouverture est ovale, légèrement oblique; son bord columellaire est nodulé par les courbes qu'il décrit; il est armé, au dedans et vers son milieu, d'une dent assez sensible."

Oscilla galilae n. sp. and *Jaminea cylindrica* differ in several features. In *O. galilae* there is a dense axial sculpture consisting of small lamellae in the interspaces between the spiral ribs (Fig. 1E), whereas in *J. cylindrica* spiral ribs are in contact with each other without any interspaces bearing axial sculpture (Fig. 1G). The new species differs from *J. cylindrica* also in general shape of the shell as the latter is more cylindrical, its top whorl is more obtuse, and its suturing is more oblique (de Folin, 1879; pl.9, fig.5). Spiral sculpture also differs as the new species has more prominent spiral cords than those of *J. cylindrica*.

BUZZURRO ET AL. (2001) have also noticed these discrepancies, but all the same, probably taking into account the cylindrical profile, well-marked columellar tooth, flat protoconch and smooth first whorl of teleoconch, they have assigned their specimens to the species described by de Folin (1879). Unfortunately it was not possible to compare our specimens with the holotype of *J. cylindrica* as it is not present in the collection of de Folin stored in MNHN (Paris, France) and is presumed to be lost (V. Heros, pers. comm.). Since the type material is no longer available, *J. cylindrica* should therefore be considered a nomen dubium.

In the family Pyramidellidae Gray, 1840 there are many morphologically similar genera, some of which show only minor differences from others. These differences are often insufficient to justify

their generic validity but perhaps sufficient to place them in subgenus status. In the original description of the genus *Hinemoa* "Shell ovate. Protoconch 1-whorled. Aperture ovate. Columella with a feeble plait. Sculpture of spiral ribs only", where the type species is *Hinemoa punicea* (Oliver, 1915: 531, pl. X, fig. 22), Oliver clearly referred to a sculpture consisting only of spiral ribs. In the description of the type species, *H. punicea* (Oliver, 1915: 531, pl. X, fig. 22), the author also pointed out the well recognized and rounded spiral ribs with intervals without striae, which is not the case for the specimens of *O. galilae* n. sp.

With regard to the details of the sculpture outlined in the description, the new species should be assigned to the genus *Oscilla* A. Adams, 1861. In their list of species found in Taşucu (south-eastern Turkey), BUZZURRO & GREPPI (1996) have also provisionally identified this species as *Oscilla* sp. The genus *Oscilla* closely resembles the genus *Miralda* A. Adams, 1864, in having prominent spiral sculptures, but *Miralda* has small axial ribs especially in the upper part of the whorls and a protoconch of type A, which is not the case in *Oscilla* (see ROLAN & FERNANDES, 1993: figs. 1, 3-7). The genus *Odetta* de Folin, 1870, also has pronounced spiral ribs, but has smooth interspaces between the ribs and a protoconch of type A (VAN AARTSEN, 1984). The genus *Cingulina* A. Adams, 1860 also resembles *Oscilla*, in having sculpture consisting of many strong spiral cords covering whorls of the spire. These two genera differ in three main features;

Species of the genus *Cingulina* are much more elongated than those of *Oscilla* and they do not have a columellar tooth.

In agreement with BUZZURRO ET AL. (2001), the genus *Oscilla* is so closely allied to the genus *Hinemoa*, that the latter may be better considered as a subgenus of *Oscilla*. These two taxa differ from each other principally in having a different arrangement of spiral ribs, uniform in *Oscilla* and not uniform in *Hinemoa*, striated interspaces in *Oscilla* and smooth ones in *Hinemoa*, and some other differences of minor importance.

The only species belonging to the genus *Oscilla* present in the Mediterranean is *O. jocosa* Melvill, 1904, originally described from the Gulf of Oman and repeatedly collected along the Mediterranean coasts of Israel (VAN AARTSEN, BARASH & CARROZZA, 1989; BOGI & GALIL, 1999; BOGI & GALIL, 2006). This species is distinguished easily from *O. galilae* by its greater dimensions, having a more conical shell, flat rather than convex whorls, three spiral ribs per whorl with the top two shorter, more prominent sculpture in interspaces especially in the early whorl and protoconch axis with an angle of 135° to the axis of the shell.

Of the four species described from the Red Sea by HORNUNG & MERMOD (1924-1925), namely *Cingulina* (*Odetta*) *bellardii*, *C.(O.) beccarii*, *C.(O.) nodulosa* and *C.(O.) appeliusi*, only the latter vaguely resembles *O. galilae*, from which it is distinguished mainly by its pupoid profile and different embryonic whorls.

ACKNOWLEDGEMENTS

We would like to thank Dr. Bella S. Galil for donating Israeli specimens. Thanks to Stefano Bartolini for the light micrograph of paratype A and to Yücel Öztürk for the SEM micrographs of the holotype. Thanks also go to Jacobus J.

van Aartsen (NMNH, Leiden, The Netherlands) for his valuable comments and to Virginie Héros (MNHN, Paris, France) for informing us about de Folin's collection in the museum.

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